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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/798,480

03/12/2004

Takayuki Ishii

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03/21/2006

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EXAMINER

COLILLA, DANIEL JAMES

ART UNIT

PAPER NUMBER

2854

DATE MAILED: 03/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/798,480

Applicant(s)

ISHII ET AL.

Examiner

Daniel J. Colilla

Art Unit

2854

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 December 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14, 16-18 and 20-36 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 11-14 and 16 is/are allowed.
- 6) ☒ Claim(s) 1-8, 9/1, 9/2, 9/3, 9/4, 9/5, 9/6, 10, 15, 18 and 20-36 is/are rejected.
- 7) ☐ Claim(s) 7, 8, 9/7, 9/8 and 17 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 August 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 11/29/05.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: 123 and 124 (as mentioned on page 54, lines 10-12. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

2. Claim 17 is objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim should refer to other claims in the alternative only. See MPEP § 608.01(n). Accordingly, the claim 17 not been further treated on the merits.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1-9, 18, 20 and 21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, applicant recites “a delivering device for sucking a medium supplied onto the medium transportation surface.” However, according to paragraph [0130] of applicant’s specification, the delivering device 350 is simply rollers 351 and 352 that do not appear to do any sucking. For purposes of examination, the delivering device will interpreted as only delivering the medium from an upstream side of the sucking unit to a downstream side.

In claim 18, line 4, applicant recites “a dimple provided in the medium transportation surface.” In line 12 of claim 18, applicant recites that “each of the sucking holes includes a sucking chamber.” However, in the specification (line 2, paragraph [0131]), applicant discloses, “a plurality of sucking chambers 323 formed to be an almost rectangular dimple” leading one to believe that the dimples and the sucking chambers are one and the same. Thus the recitation of both a dimple and sucking chambers in claim 18 is vague and indefinite. Applicant’s recitation at the end of the claim, “so that the sucking chamber functions as the dimple” is indefinite as well. It is not clear why applicant has used two terms to apparently define the same structure, and it is not clear what is required of a sucking chamber to function as a dimple. Additionally, the term “the sucking chamber” has no proper antecedent basis since a plurality of sucking chambers was previously recited.

In claim 20, line 2, “the sucking chamber” has no proper antecedent basis in the claims since applicant previously recited a plurality of sucking chambers.

Claim Rejections - 35 USC § 102

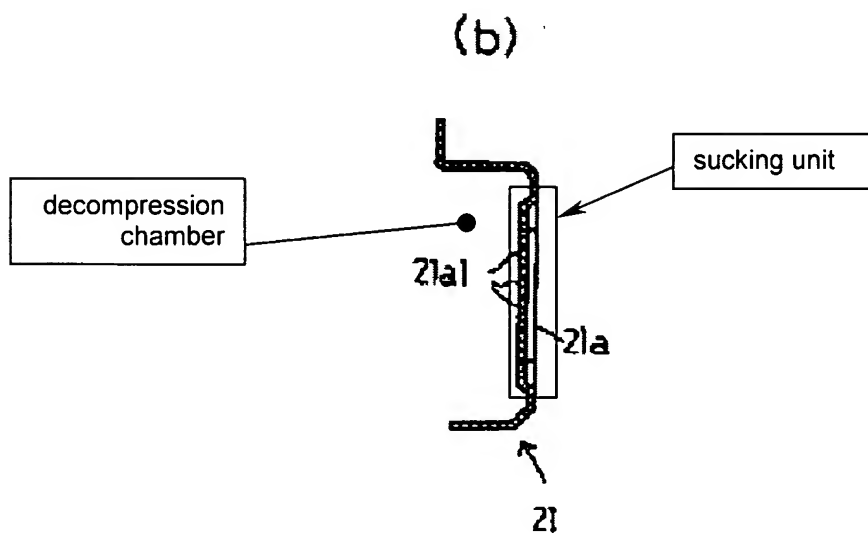
5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1, 2, 9/1-9/2, 10, 18, 20, 21, 35 and 36 are rejected under 35 U.S.C. 102(b) as being anticipated by Sato (JP 8-156351).

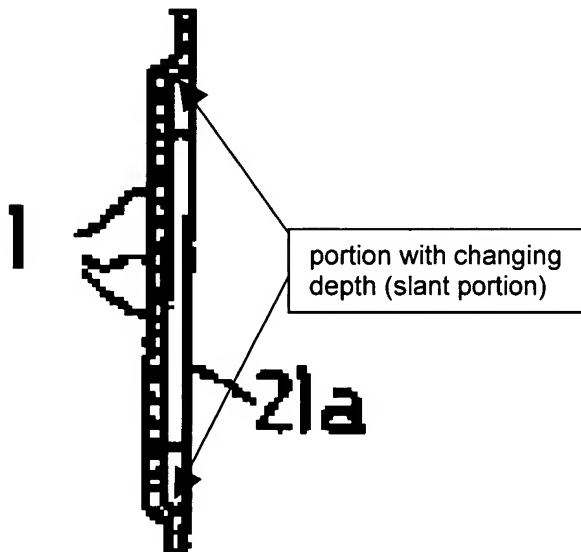
With respect to claim 1, Sato discloses a sucking unit including a medium transportation surface 10 provided with a plurality of sucking holes 21a1 as shown in Figure 6(a) and the below Figure taken from Figure 6(b) of Sato:



Sato further discloses a decompression chamber that communicates with the sucking holes 21a1 as shown above. Sato also discloses a delivering section 4,5 as shown in Figure 1 of Sato for delivering a medium from an upstream side of the sucking unit to a downstream side thereof.

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Each of the sucking holes 21a1 is formed by a through hole section communicating with the decompression chamber and a sucking chamber as shown in Figure 6 of Sato, and the area of a sucking surface opposed to the medium is larger than a sectional area of the through hole section as shown in Figure 6(a). The below Figure taken from Figure 6(b) of Sato shows a side edge of each sucking chamber provided with a slant face:

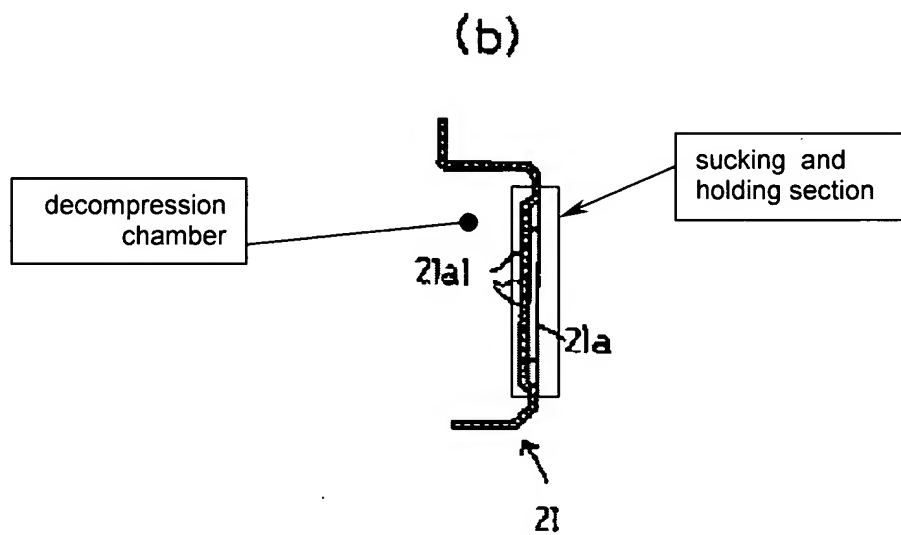


With respect to claim 2, each of the sucking chambers is formed by a concave portion formed in the medium transportation surface 10 and the sucking chambers are mutually partitioned by partition walls as shown in Figure 6(a) of Sato.

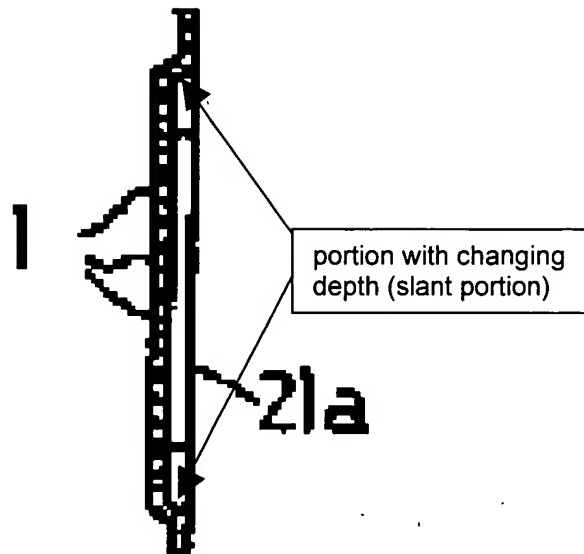
With respect to claims 9/1-9/2, Sato discloses that the fixed material transportation apparatus is in a liquid fixing apparatus (printer) as shown in Figure 2 of Sato.

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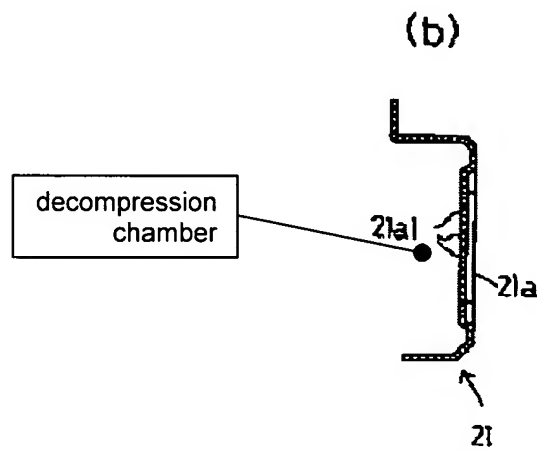
With respect to claim 10, Sato discloses a sucking and holding section provided with a plurality of sucking holes 21a1 as shown in Figure 6(a) and the below Figure taken from Figure 6(b) of Sato:



Sato further discloses a decompression chamber formed integrally with the sucking and holding section that communicates with the sucking holes 21a1 as shown above. Figure 2 of Sato shows a sucking device 19 for sucking air in the decompression chamber. Figure 2 also shows a medium being sucked onto the sucking and holding section by the sucking device 19. Each of the sucking holes 21a1 is formed by a through hole section communicating with the decompression chamber and a sucking chamber as shown in Figure 6 of Sato, and the area of a sucking surface opposed to the medium is larger than a sectional area of the through hole section as shown in Figure 6(a). The below Figure taken from Figure 6(b) of Sato shows a side edge of each sucking chamber provided with a slant face:

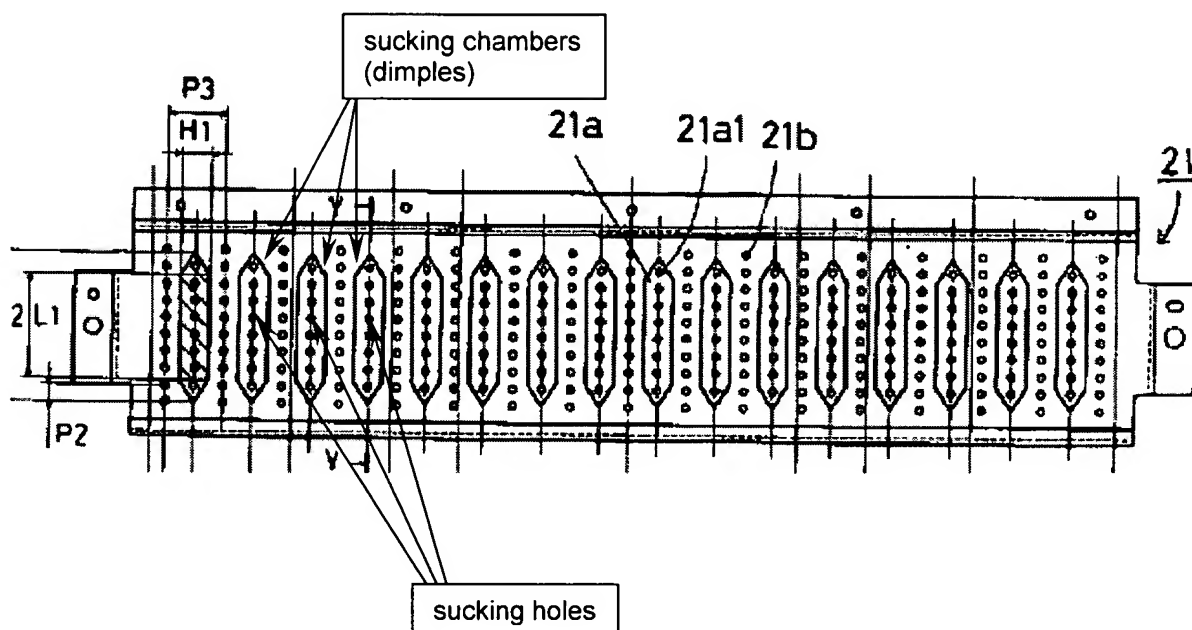


With respect to claim 18, Sato discloses a medium transportation apparatus including a dimple (sucking chamber) 21a provided in the medium transportation surface 10 having a depth that changes in a transportation direction of the medium as show above in the Figure taken from Figure 6(b) of Sato. Figure 6(b) shows the sucking unit disclosed by Sato which includes a plurality of sucking holes 21a1 best shown in Figure 6(a) of Sato. The below Figure taken from 6(b) of Sato shows the decompression chamber disclosed by Sato:



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Figure 2 of Sato shows a sucking device 19 for sucking air in the decompression chamber. Sato discloses that each of the sucking holes includes a sucking chamber (dimple) 21a having a larger area of a sucking surface opposed to the medium than a sectional area of the sucking hole 21a1 (which is quite small in comparison to the sucking chamber size) as shown below in the Figure taken from Figure 6(a) of Sato:



With respect to claim 20, the sucking chambers are formed such that a portion of each of the chambers has a depth that increases gradually from an edge on the upstream side as shown in the bottom of Figure 6(b).

With respect to claim 21, Sato discloses a liquid fixing apparatus (ink jet printer) comprising the medium transportation apparatus.

With respect to claim 35, Sato discloses a medium transportation apparatus including a medium transportation surface 10, a plurality of sucking chambers 21a, formed on the medium transportation surface 10 aligned in a transportation direction of the medium transportation

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surface, and a sucking hole 21a1 formed substantially in the center of each sucking chamber 21a as shown in Figures 6(a) of Sato. Further disclosed is a side edge of each sucking chamber being provided with a slant face as shown in the above Figure taken from Figure 6(b) of Sato.

With respect to claim 36, Sato discloses a medium transportation apparatus including a medium transportation surface 10, a sucking chamber 21a, formed on the medium transportation surface extending in a transportation direction of the medium substantially from an upstream end to a downstream end of the medium transportation surface 10, and a plurality of sucking holes 21a1 formed in the sucking chamber 21a as shown in Figures 6(a) of Sato. Further disclosed is a side edge of said sucking chamber being provided with a slant face as shown in the above Figure taken from Figure 6(b) of Sato.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 3-5, 6, 9/3-9/5 and 9/6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sato (JP 8-156351) in view of Teumer *et al.* (US 6,179,285).

With respect to claim 3, Sato discloses the claimed apparatus except for the concave portion being partitioned by partition walls in a subscanning direction. Figure 6(a) of Sato shows the sucking chambers partitioned by partition walls in the scanning direction. Teumer *et al.*

teaches partitioning walls in a subscanning direction as shown below in the Figures taken from

Figures 1 and 2 of Teumer *et al.*:

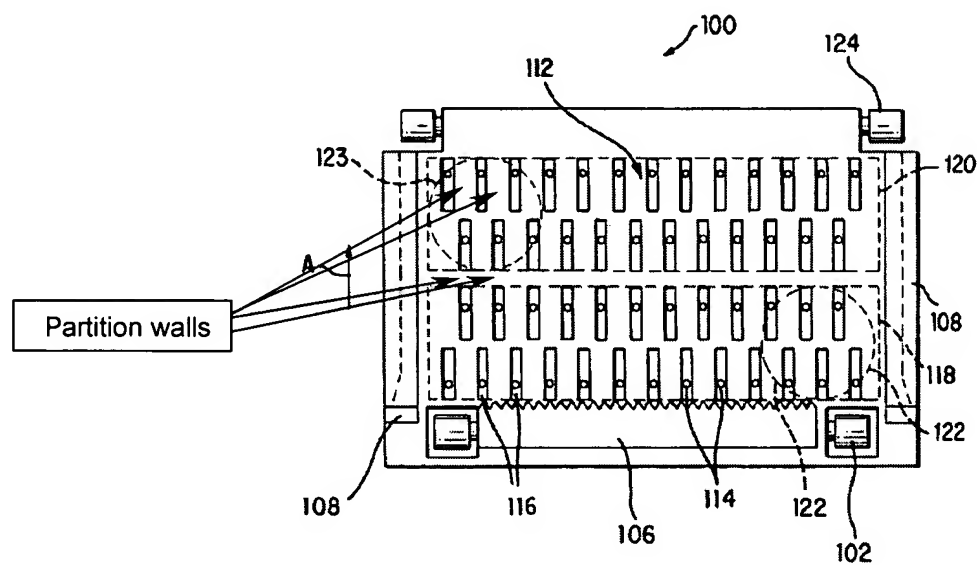
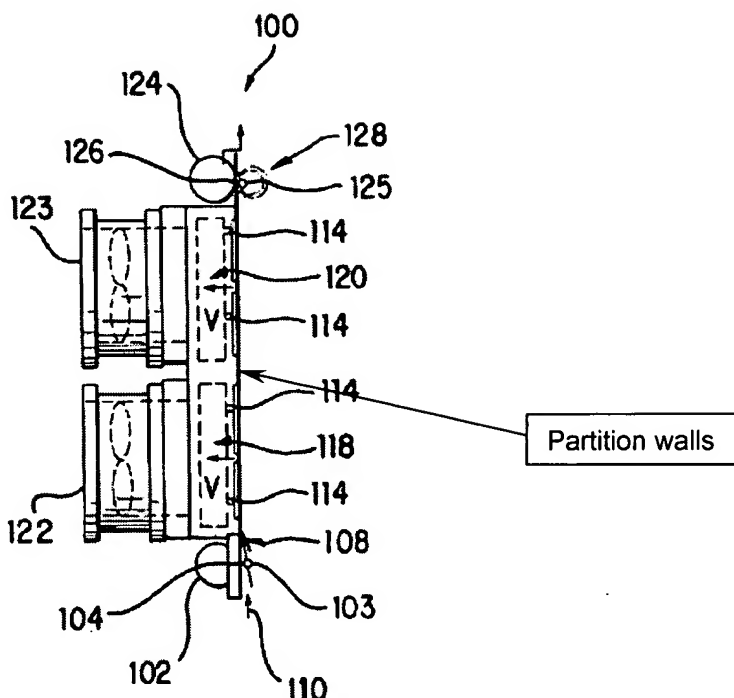


FIG. 1

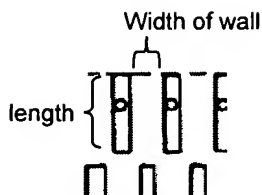
**FIG. 2**

It would have been obvious to combine the teaching of Teumer *et al.* with the apparatus disclosed by Sato for the advantage of guides 108 and spring plate 106 that assist in guiding the media to the platen.

With respect to claim 4, Teumer *et al.* each of the sucking chambers 116 has a sucking surface formed by an almost rectangular concave portion. It is noted that no manufacturing process will ever achieve a perfect rectangle and therefore the sucking chamber 116 disclosed by Teumer can be considered “almost” rectangular.

With respect to claim 5, Teumer *et al.* teaches that the rectangular grooves 116 can also be configured as holes in col. 5, lines 4-7.

With respect to claim 6, as shown below (Figure taken from Figure 1 of Teumer), the width of the top of the partition wall is smaller than a length of the sucking chamber 116.



With respect to claims 9/3-9/5 and 9/6, Teumer *et al.* discloses that the fixed material transportation apparatus is in a liquid fixing apparatus (printer) as shown in Figure 3 of Teumer *et al.*

9. Claims 22-27 and 28/22-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sato (JP 8-156351) in view of Kanemura (JP 07-009712).

With respect to claim 22, Sato discloses the claimed fixed material transportation apparatus except for the hard porous material. Sato discloses the claimed apparatus as mentioned in the above prior art rejection of claim 1. Kanemura teaches a platen 10 that can be made of a porous, ceramic material (ceramic being a hard material). It would have been obvious to combine the teaching of Kanemura with the apparatus disclosed by Sato for the advantage of a platen that absorbs ink that is ejected outside the perimeter of the printing material and prevents the soiling of subsequently fed printing materials.

With respect to claim 23, Kanemura teaches providing a hard porous material 10 at locations corresponding to widths of various papers as shown in Figure 5(a) of Kanemura.

With respect to claim 24, Figures 3-6 of Kanemura teaches providing the hard porous material 10 in a lateral direction.

With respect to claim 25, Kanemura teaches a slide 30 for removing the hard porous material 10 (see paragraph [0028] of the machine translation of Kanemura).

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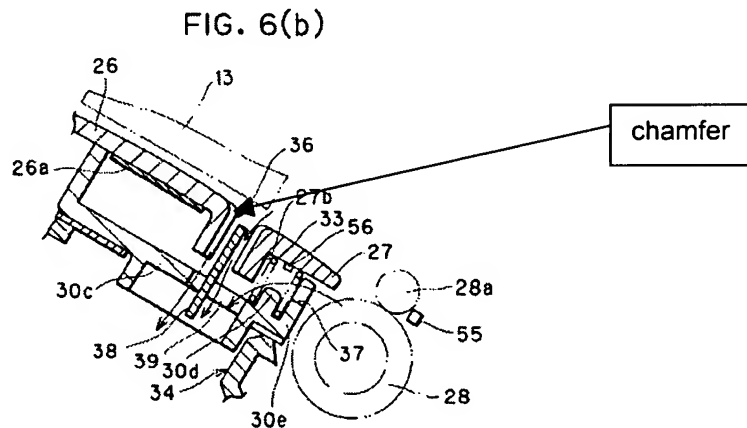
With respect to claim 26, Kanemura teaches providing an ink absorbing material 31 to the underside of the hard porous material 10 as shown in Figure 6(b) of Kanemura (see paragraph [0032] of the machine translation of Kanemura).

With respect to claim 27, Sato discloses a decompression as shown in the Figures above.

With respect to claim 28/22-27, both Sato and Kanemura disclose a liquid fixing apparatus comprising the fixed material transportation apparatus.

10. Claims 29-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sato (JP 8-156351) in view of Ito et al. (US 6,196,672).

With respect to claim 29, Sato discloses the claimed medium transportation apparatus except for the chamfer. However, Ito discloses a fixed material transportation apparatus including a transportation surface 26 on which a fixed material is sucked and transported. A chamfer is provided at an air inlet portion of a sucking hole 36 formed in the surface 26 as shown below in the Figure taken from Figure 6(b) of Ito et al.:



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It would have been obvious to combine the teaching of Ito with the apparatus disclosed by Sato for the advantage of the cooling fan 35 for cooling the apparatus while it operates.

With respect to claim 30, the chamfered surface is a rounded surface.

With respect to claims 31 and 33, Sato in view of Ito et al. discloses the claimed apparatus except for that the dimensions of the chamfered surface are not known to the examiner. However, the optimal dimensions of the surface would have readily been obvious to one of ordinary skill in the art through routine experimentation. It has been held that "[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." In re Aller, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955); see also Peterson, 315 F.3d at 1330, 65 USPQ2d at 1382 ("The normal desire of scientists or artisans to improve upon what is already generally known provides the motivation to determine where in a disclosed set of percentage ranges is the optimum combination of percentages.");
* In re Hoeschele, 406 F.2d 1403, 160 USPQ 809 (CCPA 1969).

With respect to claim 32, interpreting the term "taper surface" broadly, the chamfer can also be considered a taper surface.

With respect to claim 34, Ito et al. discloses a liquid fixing apparatus.

Allowable Subject Matter

11. Claims 11-14 and 16 are allowed.

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12. Claims 7-8, 9/7 and 9/8 are objected to as being dependent upon a rejected base claim, and rejected for the above mentioned informalities, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims and if rewritten to overcome the above mentioned informalities.

13. The following is a statement of reasons for the indication of allowable subject matter:

Claims 11-14 and 16 have been indicated as containing allowable subject matter primarily for the distances h, i, j and k being equal to one another. The distances being defined as shown in Figure 13 of applicant's drawings.

Response to Arguments

14. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

Applicant's arguments with respect to the Wotton/Nomura combination are moot since these references have been removed due to the amendment made to the claims.

Similarly, applicant's argument with respect to the 102(b) rejection of claim 29 and the 103(a) rejection of claims 31 and 33 is moot in view of the new grounds of rejection.

With further respect to claims 31 and 33 and applicant's argument regarding routine experimentation, while Ito may not explicitly address the reasons for the given dimensions of the rounded and/or tapered surface, one of ordinary skill in the art would readily recognize that adjustment of such dimensions would directly affect the airflow of the system including variable such as generated negative pressure.

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15. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel J. Colilla whose telephone number is 571-272-2157. The examiner can normally be reached on M-F 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Hirshfeld can be reached on 571-272-2168. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

February 28, 2006



Daniel J. Colilla
Primary Examiner
Art Unit 2854